

# Travis Zhang

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## EDUCATION

**Cornell University**, Ithaca, NY, *B.S. Computer Science*

Sep 2020 – May 2024

- **Current Courses:** Multivariable Calculus, Discrete Structures, Object-Oriented Programming and Data Structures, Introduction to Machine Learning

**Hamilton High School**, Chandler, AZ

July 2016 – May 2020

- Weighted GPA: 4.927/5.0, Unweighted GPA: 4.0/4.0
- ACT: 36; Math: 36, Science: 36, Reading: 35, English: 35
- **Courses:** Multivariable Calculus, Differential Equations, Linear Algebra, AP Java, AP Physics C: Mechanics and E & M
- **Scholarships:** Steve Sanghi Scholarship Award, Andy Grove Intel Scholarship, National Honor Society Semifinalist Scholarship, Impact Scholarship, Worth & Dot Howard Foundation Scholarship

## EXPERIENCE

**HackOurCampus Hackathon**

Aug 2020

- Developed iOS Geofencing app that reminded students to bring both COVID-related and personal items

**ASU Robust Machine Learning Student Researcher**

April 2019 – Present

- Applied transformation-invariant constraints on adversarial training using Tensorflow to improve CNN performance. Implemented 3 algorithms to reduce the computational cost during adversarial training.
- Designed and implemented optimization algorithms in Pytorch to fool a Deep RL agent in a realistic scenario.

**University of Central Florida's Competitive Programming Camp**

June 2017

- Learned about various competitive programming algorithms including Dijkstra's algorithm and Prim's algorithm; Competed in 5+ programming competitions at the camp

**ASU Signal, Information, Networks, and Energy Laboratory Student Researcher**

Sep 2017 – April 2018

- Created program to temporally and spatially interpolate power outputs of solar panels of households in various locations using various python libraries (pandas, numpy, matplotlib)

**Hamilton Robotics Team**, *Head of Electrical Team*, *Head of Communications*

Aug 2016 – May 2020

- Designed parts of robot using CAD software; Programmed robot using Java and FRC WPI Library; Recruited & trained 40+ Hamilton members

**Robotics Volunteering**, *Lead Mentor*

Aug 2016 – May 2020

- Taught URM students from Title 1 schools programming and robot-building process

**Mathworks Math Modeling Challenge**, *Team Leader*

Jan 2019 – Feb 2020

- Developed and implemented mathematical models to solve real-world problems; Wrote a 15+ page research paper to report experimental designs and results

## PROJECTS

**National Honor Society App**

July 2019 – Jan 2020

- Developed both the iOS and Android mobile application for Hamilton's NHS club; Developed and incorporated Google Firebase to create a personalized experience for users

**CUSD Equity Symposium App**

Nov 2018 – May 2020

- Developed iOS app for the Chandler school district's annual equity symposium

**Skin Cancer Diagnosis using Neural Networks**

Aug 2018 – April 2019

- Built Convolutional Neural Networks (CNNs) and Generative Adversarial Networks in Keras + Tensorflow to improve computer diagnosis of skin cancer.

## HONORS AND AWARDS

- Association of Chinese American Physicians Bronze Prize (Nov 2019)
- Arizona Science and Engineering Fair 3<sup>rd</sup> place (April 2019)
- Arizona Science and Engineering Fair 3<sup>rd</sup> place (April 2016)
- Arizona Junior Science and Humanities Symposium 2<sup>nd</sup> place (April 2016)

## ADDITIONAL INFORMATION

**Computing Skills:** Java, Python, Keras, Swift, Pytorch, Tensorflow, Git/Github, HTML5, CSS3

- **Learning:** C++, Javascript, React

**Miscellaneous Skills:** English, Mandarin, Cantonese, Photoshop, Autodesk Inventor, Solidworks CAD

**Interests:** Photography, Piano, Adversarial Attacks in Machine Learning, Robotics, Airplanes